

**What is claimed is:**

1. An unauthorized access prevention system, including:
  - a search unit searching the flowing-in path of  
5 unauthorized access to services disclosed from a user's  
communication network;
  - a determination unit determining a place to  
implement a countermeasure for protecting the services  
from the unauthorized access based on the result of the  
10 search; and
  - a notification unit notifying, according to a  
determination that the countermeasure is implemented  
in the flow source that makes the unauthorized access  
flow into the user's communication network, the  
15 determination to a flow source.
2. A recording medium in which a program that directs  
a computer to implement a countermeasure against  
unauthorized access is recorded and in which the program  
20 can be read by the computer, and the program directs  
the computer to perform the following processes by being  
executed by the computer:
  - a search process of searching the flowing-in path  
of the unauthorized access to the services disclosed  
25 from the user's communication network;

a determination process of determining the place to implement the countermeasure for protecting the services from the unauthorized access based on the result of the search; and

5           a notification process of notifying, according to a determination that the countermeasure is implemented in the flow source that makes the unauthorized access flow into the user's communication network, the determination to the flow source.

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3.     The recording medium according to claim 2, wherein the search process is performed by a computer when the unauthorized access is detected.

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4.     The recording medium according to claim 2, wherein the search process is performed by the computer when the detection of the unauthorized access is notified.

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5.     The recording medium according to claim 2, wherein the process of searching the flowing-in path is performed by the computer based on the monitoring information on the traffic transmitted by a user's communication network and the unauthorized access information indicating the contents of the unauthorized

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access.

6. The recording medium according to claim 5, wherein  
the monitoring information includes at least the  
5 position information on an edge router arranged on the  
border between the user's communication network and the  
communication network adjacent to the user's  
communication network and the monitoring information  
on the traffic that flows into the user's communication  
10 network via the edge router.

7. The recording medium according to claim 2, wherein  
the process of notifying the determination to the  
flow source after mutual attestation is conducted between  
15 the notification unit and the flow source of the  
unauthorized access is performed by the computer.

8. The recording medium according to claim 2, wherein  
the process of notifying the determination to the  
20 flow source after information on a security policy for  
the operation of each network is exchanged with the flow  
source that transmits the unauthorized access is  
performed by the computer.

25 9. The recording medium according to claim 8, wherein

information on a security policy is the information indicating the time required till the countermeasure against the unauthorized access is cancelled after the unauthorized access is not detected any more.

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10. The recording medium according to claim 9, wherein when the time indicated by the information on the security policy differs between the user' communication network and the flow source, a shorter time of the two is used as the time required till the countermeasure against unauthorized access is cancelled after the unauthorized access is not detected any more.

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11. The recording medium according to claim 10, wherein the process of notifying the flow source of the determination and the information indicating the time required till the countermeasure against the unauthorized access is cancelled after the unauthorized access is not detected any more is performed by the computer.

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12. The recording medium according to claim 2, wherein the process of notifying the flow source of the unauthorized access of the determination using the communication path that differs from the flowing-in path

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of the unauthorized access is performed by the computer.

13. The recording medium according to claim 2, wherein  
the notification process directs the computer to  
5 perform the process of judging whether, when it is  
determined that the countermeasure is implemented in  
the flow source that makes the unauthorized access flow  
into the user's communication network, the determination  
is notified to the flow source;  
10 by having the program executed by the computer;  
the unauthorized access countermeasure  
implementation control process that has the  
countermeasure for protecting the services from the  
unauthorized access implemented in the flow source when  
15 it is judged that the determination will not be notified  
to the flow source based on the above notification process  
is further performed by the computer.

14. The recording medium according to claim 13, wherein  
20 the judgement is made based on the judgement  
information on the flow source that is given in advance.

15. The recording medium according to claim 2, wherein  
by having the program executed by the computer;  
25 the unauthorized access countermeasure

implementation control process that has the countermeasure for protecting the services from the unauthorized access implemented in the user's communication network based on the determination that  
5 said countermeasure is implemented in the user's communication network is performed by the computer.

16. The recording medium according to claim 15, wherein  
the process of implementing the countermeasure in  
10 the POP (point of presence) edge router to which the flow source of the unauthorized access is connected is performed by the computer.

17. The recording medium according to claim 16, wherein  
15 the process of identifying the POP edge router to which the transmitter that transmits the unauthorized access is connected based on the information obtained from the operation management system that manages the operation of the user's communication network is further  
20 performed by the computer.

18. The recording medium according to claim 15, wherein  
by having the program executed by the computer;  
the process of obtaining a notification of the  
25 determination that unauthorized access to the services

disclosed from a communication network different from the user's communication network is made to flow into said other communication network is further performed by the computer; and

5           the process of implementing the countermeasure for protecting the services disclosed from said other communication network from the unauthorized access related to the notification in the user's communication network when the notification is obtained by the  
10       notification obtaining process is performed by the computer.

19.   The recording medium according to claim 15, wherein  
15           the countermeasure implemented by the unauthorized access countermeasure implementation control process is cancelled after the unauthorized access is not detected any more and a preset time passes.

20.   The recording medium according to claim 19, wherein  
20           The preset time is set based on the security policy on the network operation of both the user's communication network and the other communication network.

21.   The recording medium according to claim 20, wherein  
25           when the times set between the user's communication

network and the other communication network based on the security policy on the network operation of both networks differ between both networks, the countermeasure is cancelled after the unauthorized  
5 access is not detected any more and a shorter time of the two passes.

22. The recording medium according to claim 2, wherein  
by having the program executed by the computer;  
10 the process of obtaining a notification of the determination that unauthorized access to the services disclosed from a communication network different from the user's communication network is made to flow into said other communication network is performed by the  
15 computer;

the process of searching the flowing-in path of the unauthorized access related to the notification in the user's communication network when the notification is obtained by the notification obtaining process is  
20 performed by the computer;

the process of determining the place to implement the countermeasure for protecting the services disclosed from said other communication network from the unauthorized access related to the notification based  
25 on the result of the search when the notification is



obtained by the notification obtaining process is performed by the computer; and

5       the process of notifying, according to a determination that the countermeasure is implemented in the flow source that makes the unauthorized access related to the notification flow into the user's communication network when the notification is obtained by the notification obtaining process, the determination to the flow source is performed by the computer.

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23.   The recording medium according to claim 22, wherein  
by having the program executed by the computer;  
the unauthorized access countermeasure  
implementation control process that has the  
15   countermeasure for protecting the services disclosed  
from the user's communication network or the other  
communication network from the unauthorized access  
related to the notification implemented in the  
communication network of the notification source of the  
20   notification when the notification obtained by said  
notification obtaining process is the same as that  
obtained in the past is further performed by the computer.

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24.   The recording medium according to claim 23, wherein  
25       the process of notifying the information that

uniquely identifies the unauthorized access related to the notification when the determination is notified is performed by the computer.

- 5        25.    The recording medium according to claim 2, wherein  
              by having the program executed by the computer;  
              the process of recording the history of the  
notification is further performed by the computer.

- 10       26.    An unauthorized access prevention method,  
              including:

              searching the flowing-in path of unauthorized  
access to the services disclosed from the user's  
communication network;

- 15                determining the place to implement the  
countermeasure for protecting the services from the  
unauthorized access based on the result of the search;  
and

- notifying, according to a determination that the  
20       countermeasure is implemented in the flow source that  
makes the unauthorized access flow into the user's  
communication network, the determination to the flow  
source.

- 25       27.    A computer data signal embodied by a carrier wave

and representing a program that directs a computer to implement a countermeasure against unauthorized access, which, by having the program executed by the computer, directs the computer to perform the processes of;

5            searching the flowing-in path of the unauthorized access to the services disclosed from the user's communication network;

             determining the place to implement the countermeasure for protecting the services disclosed  
10        from the user's communication network from the unauthorized access based on the result of the search;  
             and

             notifying, according to a determination that the countermeasure is implemented in the flow source that  
15        makes the unauthorized access flow into the user's communication network, the determination to the flow source.